

VESCO PURÉE SERIES

A modified blender kit designed to prepare homemade formula used by enteral tube users.



IBE CAPSTONE

MEGAN IMWALLE

DE MOREHEAD

TYLER OCHS

MITCH SWITALA

WES TERVEER

STEPHEN TONNIS

BACKGROUND

RESEARCH

EXPLORATION

DEVELOPMENT

SOLUTION

BUSINESS MODEL

BLENDERIZED DIETS

4

A method of enteral feeding users creating their own food supplements with real food from inside their home using a blender.

BENEFITS



Increased **gastrointestinal function**

Decreased gagging and retching

Decreased vomiting

Better stool function

Increased interest in **consumptions of** **foods by mouth**

Increased **dietary variety**

Normalizes Mealtime

STORAGE



Refrigerate up to 24 hours

Freeze up to 3 months

Pump up to 2 hours

RISKS



Inadequate and **unbalanced nutrition**

Potential **food contamination** due to improper food preparation and storage.

More **time-consuming** and possibly **more expensive**

May increase tube **clogging**

EQUIPMENT



Heavy-duty **BLENDER**

Measuring cups

Strainer

Airtight **containers**

PRIMARY RESEARCH

5

I attended a **Oley Conference** where people gave presentations on gastrointestinal tube users and was able to speak further to **4 medical experts**.

A **survey** was posted in 8 different feeding tube support groups on Facebook and received **75 responses**.

For interviews, the survey respondents who stated they were interested in a follow up were contacted and ended up with **15 interviews total**.

OLEY CONFERENCE

Upcoming Regional Conferences

2018 Oley Regional Conferences

Boston Area, Massachusetts Regional Conference

Bentley University
Saturday, October 6, 2018

[Click here to view regional flyer](#)

[Click here to view agenda](#)

[Click here to view menu](#)

[Click here to view conference presentations](#)

With support from



Columbus, Ohio Regional Conference

Hilton Columbus Downtown
Saturday, September 15, 2018

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FACEBOOK PAGES


Photos Videos Marketplace **Pages** Places Gr


**Blenderized Food For Tubies** ✓ Liked ▾
9.1K like this · Gresham, Oregon · Nonprofit Organization
We are a not-for-profit group here to help share information on real food...


**Blenderized Diets** Like
41 like this · Alternative & Holistic Health Service
Finding feeding solutions for special people using a blender and holistic...

**Blenderized RN** ✓ Liked ▾
1.5K like this · Medical Company
Real Food Tube-Feeding consulting for Pediatric G-tube Clients. Now a...

**Blenderized Diet** Like
687 like this · Medical Company
Our goal is to teach parents, families, and health care professionals the ...


**My Tube Feeding** ✓ Liked ▾
4.5K like this · Medical & Health
15+ Matching Posts
...day, [blenderized](#) recipes that are easy to follow and prepare, and oth...


**CdLS Blenderized Diet Support** Like
65 like this · Community
This page is not maintained. Please join us at the CdLS [Blenderized Di...](#)


**Real Food Blends** ✓ Liked ▾
100K like this · Chesterton, Indiana · Product/Service
13+ Matching Posts
Shareable, 4000+ real food meals for people with feeding tubes & me...


FACEBOOK GROUPS


Photos Videos Marketplace Pages Places **Groups**


**Feeding Tube Support** + Join
3K members · 10+ posts a day
A support group for children and adults who have feeding tubes!...

**Feeding Tube Caregivers** + Join
4.3K members · 7 posts a day
This is not a group for doctors, nurses, therapists, dietitians, ect, unless your child has a feeding tube...

**Feeding Tube Support and Friends** + Join
799 members · 3 posts a day
Welcome everyone, to our Tube Family! This is a group for Feeding Tube users and their caregivers. ...

**Pediatric feeding disorders / FTT/ GERD/and kiddos with feeding tubes** + Join
17K members · 10+ posts a day
United States · A place for parents of infants/children with feeding disorders, Failure to Thrive and GERD to offer eachother support and...

**Home-Based Feeding Tube Weaning, sponsored by Growing Independent Eaters** + Join
4.8K members · 10+ posts a day
Our philosophy at GIE is to respect the child, create trust, use appetite, and support parents in our own "tube weans" as we move into family...

**Real Food for Tube-Fed Kids** ✓ Joined
3 unread posts · Member since September
This group is to support parents and caregivers in their quest to feed their tube-fed children the very best real food!...

MAIN SURVEY RESULTS

6

From posting our survey in 5 different **FACEBOOK GROUPS**, we were able to obtain **74 RESPONSES**. Of those results **77%** of respondents **DO A BLENDERIZED DIET** and **13.5%** said they **WOULD** if they were properly able to.

WHAT IS **STOPPING** YOU FROM A **BLENDERIZED DIET**?



WHAT IS THE **BRAND** OF YOUR **BLENDER** YOU USE?



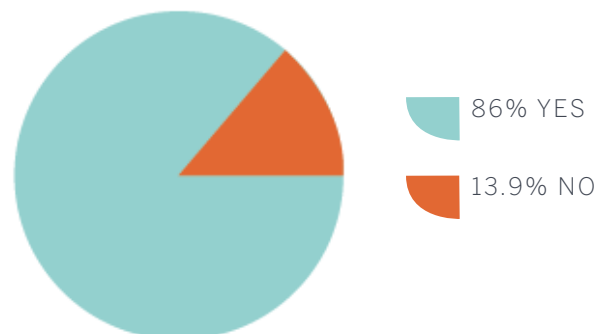
WHERE DO YOU OBTAIN YOUR **RECIPE INFORMATION**?



HOW OFTEN DOES YOUR **TUBE** GET **CLOGGED**?



DOES **UNDERSTANDING** WHICH **FOODS** ARE IN YOUR FORMULA **MATTER TO YOU**?



IN WHAT **CIRCUMSTANCES** DOES YOUR **TUBE** **CLOG**?

1. **UNPROPERLY BLENDED**
2. **MEDICATION**
3. **STICKY FOODS**
4. **TUBE AGE**

INTERVIEW INSIGHTS

7

Based on 15 interviews both in-person and over the phone.

LACK OF KNOWLEDGE

A large barrier for consumers of feeding tubes is the lack of knowledge and resources for blended food diets.

COST / SINGLE ITEM USE

The cost of replacing supplies is expensive. A lot of the items users have only last a few uses.

TIME CONSUMING

The time it takes to prepare and figure out what to make for the blended food diet is a turn off for a lot of tube users.

PRECISE MEASUREMENTS

In a lot of the interviews they mentioned their child pulling out the tube and them being unaware of it.

CLOGGING IN THE TUBE

Medication and certain foods such as blueberries and oatmeal cause tube clogging if not prepared correctly.

TRAVELING PAINS

Traveling with the supplies is a pain. You have to carry spares, keep the food cold, and the blender is large.

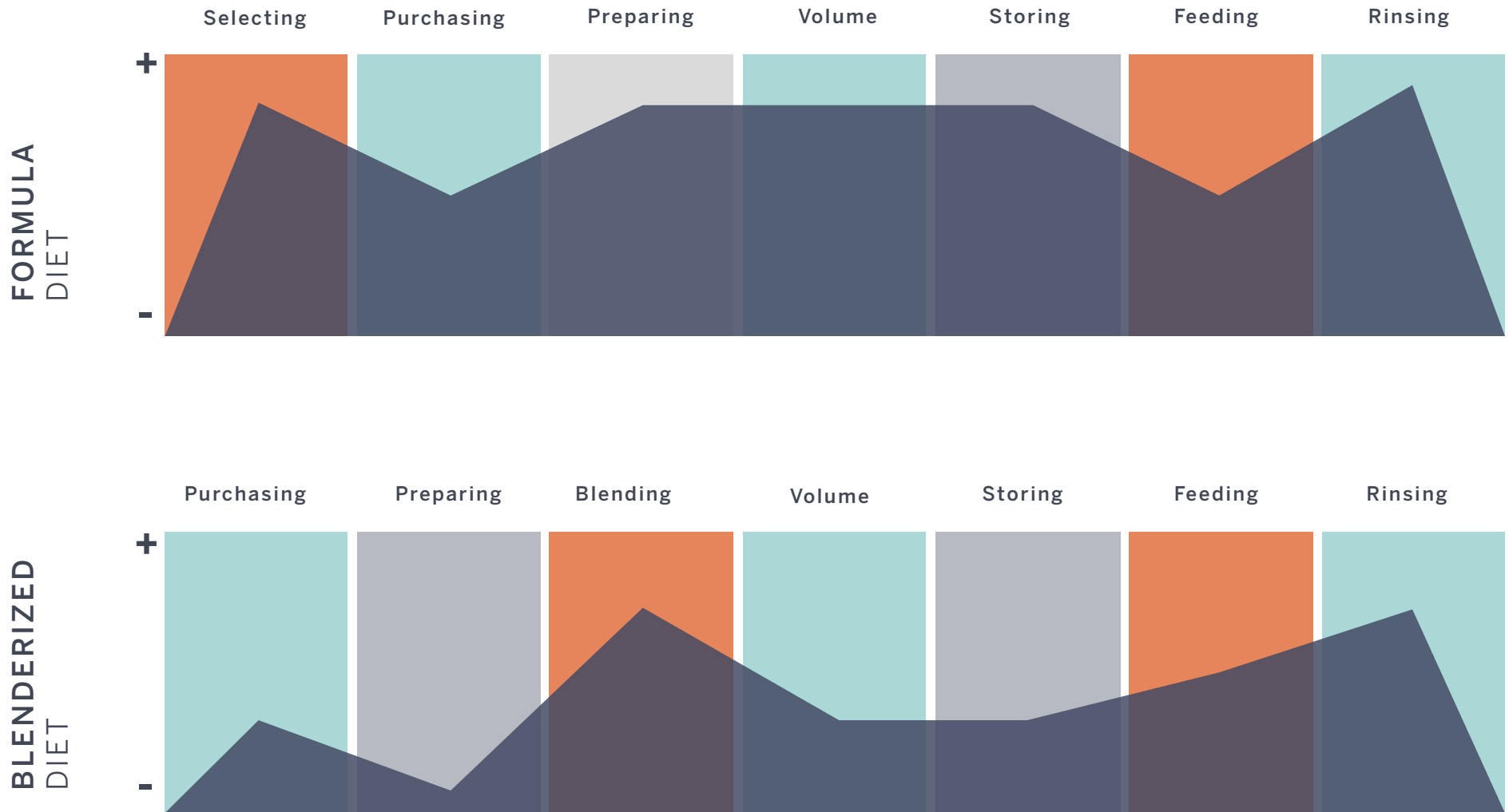


USER EXPERIENCE

8

After completing research, we compared the formula and blenderized diets currently.

We wanted to see where we could improve the current situations to help enteral feeding users easily switch over.



PERSONAS

Based on the research, personas were created in order to help with knowing who the design would effect and benefit from our design.



JENNIFER WILLIAMS

36 years old, Mother of a tubie.

Jennifer is a mother of a 18 month old gastronomy tube user. She currently uses a formula blended diet, which cost a lot of money each month.

Jennifer would like to switch to blended diet but is nervous to because of the lack of information. She wishes there was a easy way to start BTF.



TIMOTHY BROWN

4 years old, gastronomy tube user.

Timothy has been a gastronomy tube user ever since he was born. As he is growing up he has become more aware of his disease and wants to be more like his friends and family.

Timothy is on a blenderized diet because it is easier for his mother and it makes him feel like a normal kid.

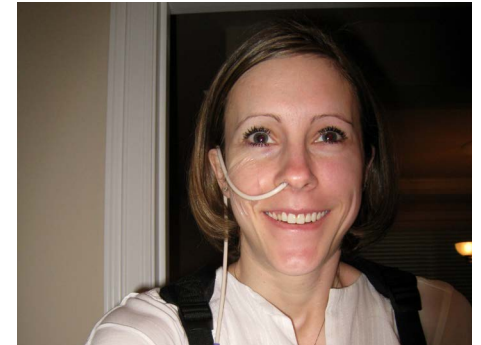


MIRANDA BRILL

38 years old, dietitian.

Miranda has been dietitian ever since she has graduated college. She has been working with tubie's for 5 years.

Miranda would like to prescribe a blenderized diet to all of her patients but weary because of the lack of information and microbial contamination.



APRIL WALKER

45 years old, gastronomy tube user.

April has been a tube user ever since the car accident she was in 15 years ago. Miranda is currently using a blenderized diet.

Miranda loves her blenderized diet because she knows which foods are going into her body but has some complications with it while she travels.

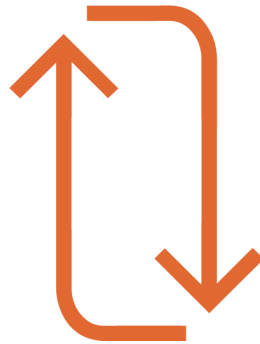
KEY TAKEAWAYS

Focusing on 3 things that make a successful blended foot diet tube feeding.



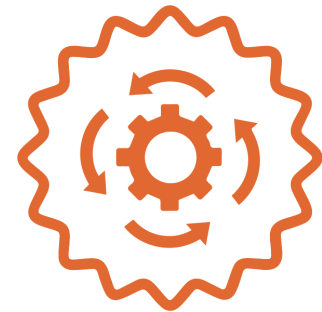
SAFE

- Amount and Quality of food
- Hygiene of products and food
- Safe recipes to prevent sickness



REPEATABLE

- Easy to clean
- Durable
- Easy to repeat process



EFFICIENT

- Less time consuming
- Proper Equipment
- Minimizing the amount of steps.

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TEAM IDEATION

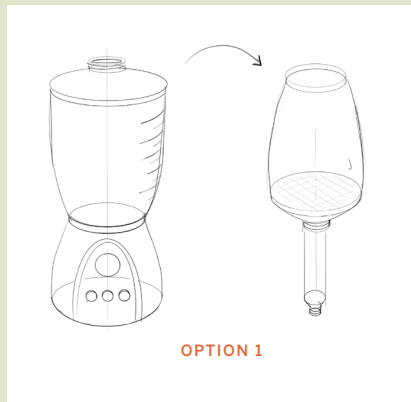
12

Created a team exercise to help involve the engineers and business teammates in the ideation process.

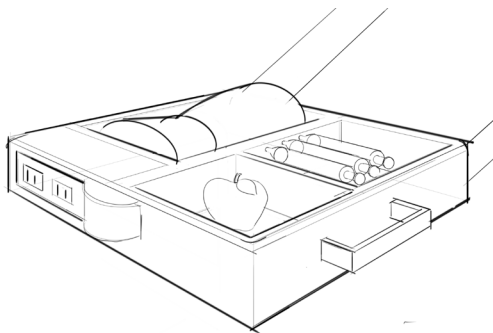
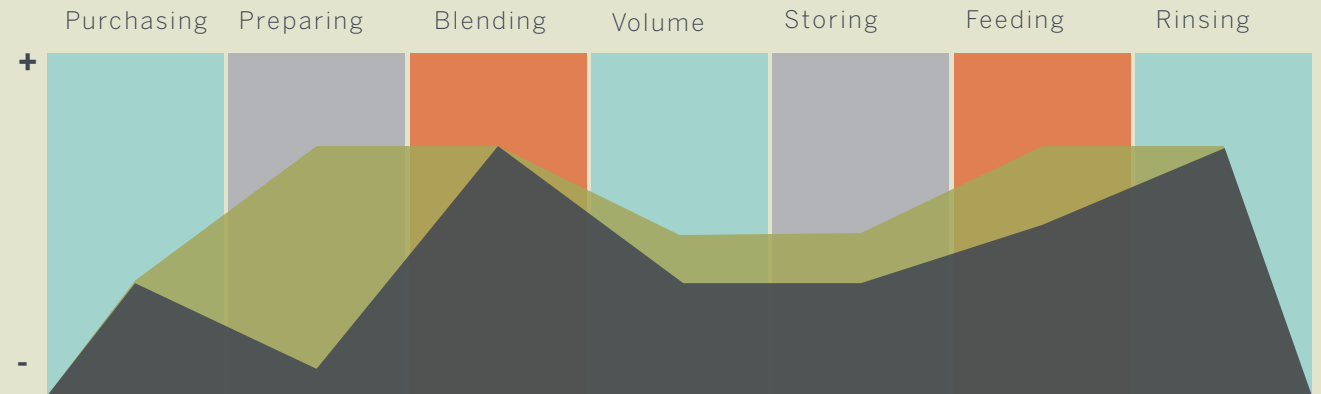


IDEATION COMPARISON

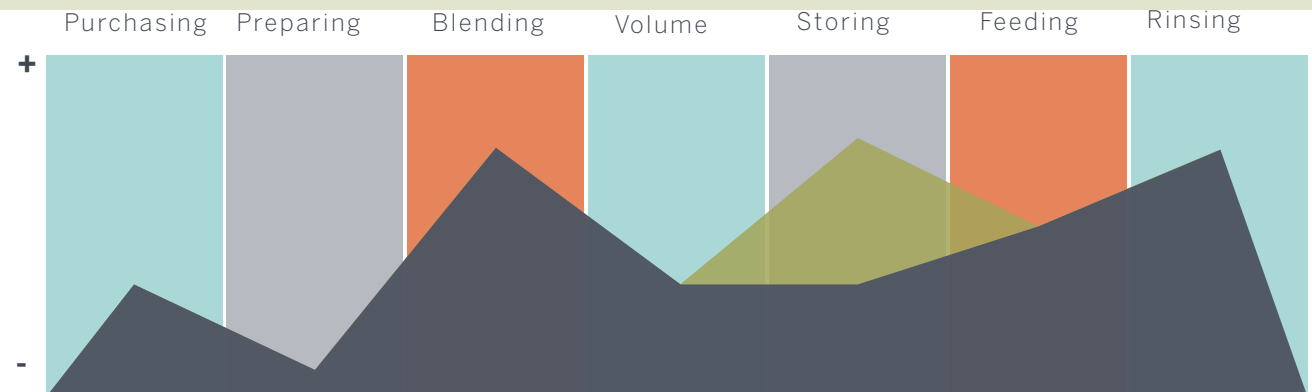
After completing ideation, the solutions were compared to the current blenderized diet process. This visualized how useful the solution would be and which method to move forward with. The easy transfer and recipe app showed the most improvement.

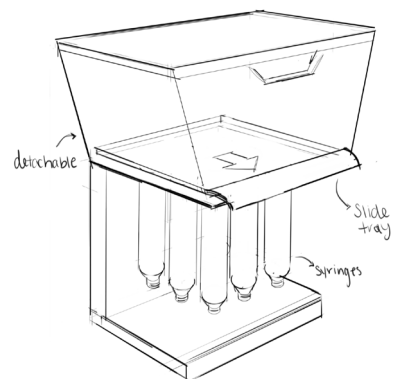


EASY
TRANSFER

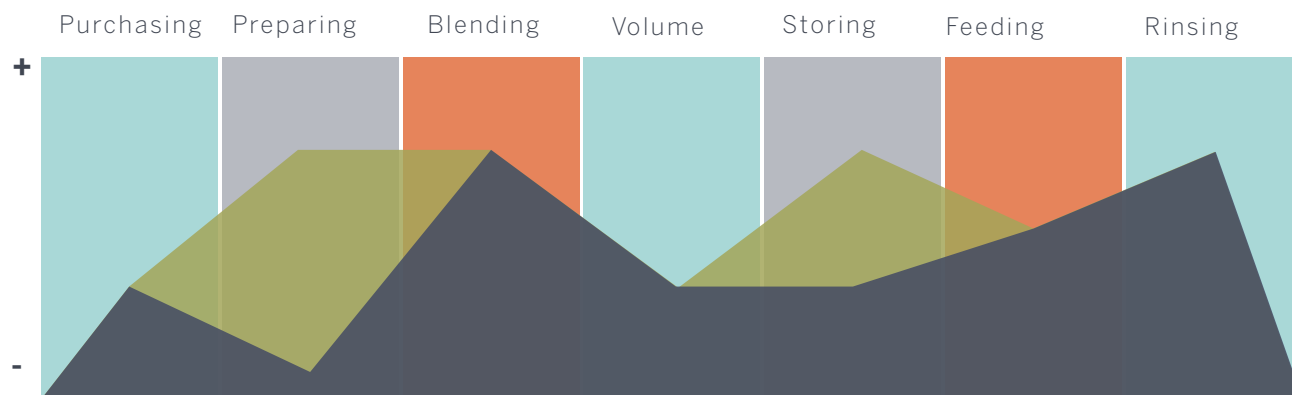


TRAVEL
KIT

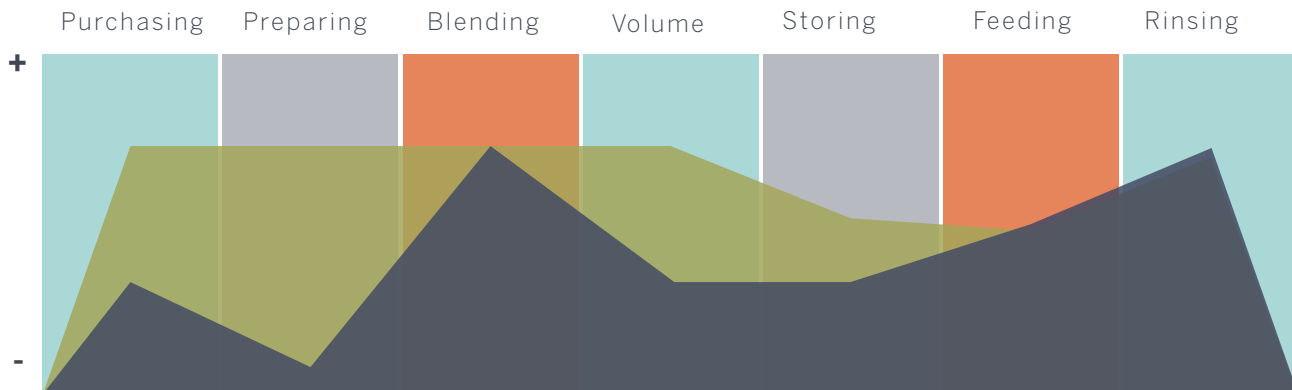




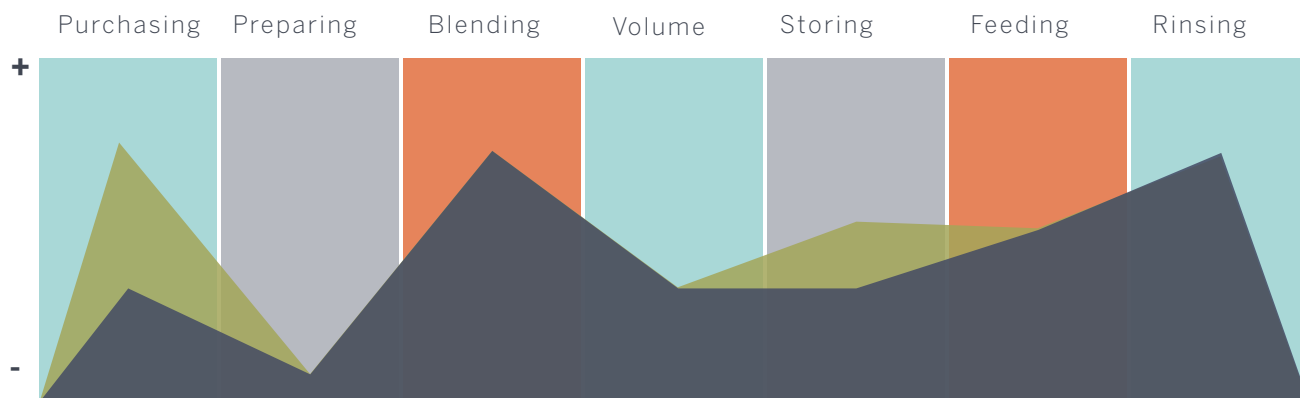
SYRINGE FILLER



RECIPE APP



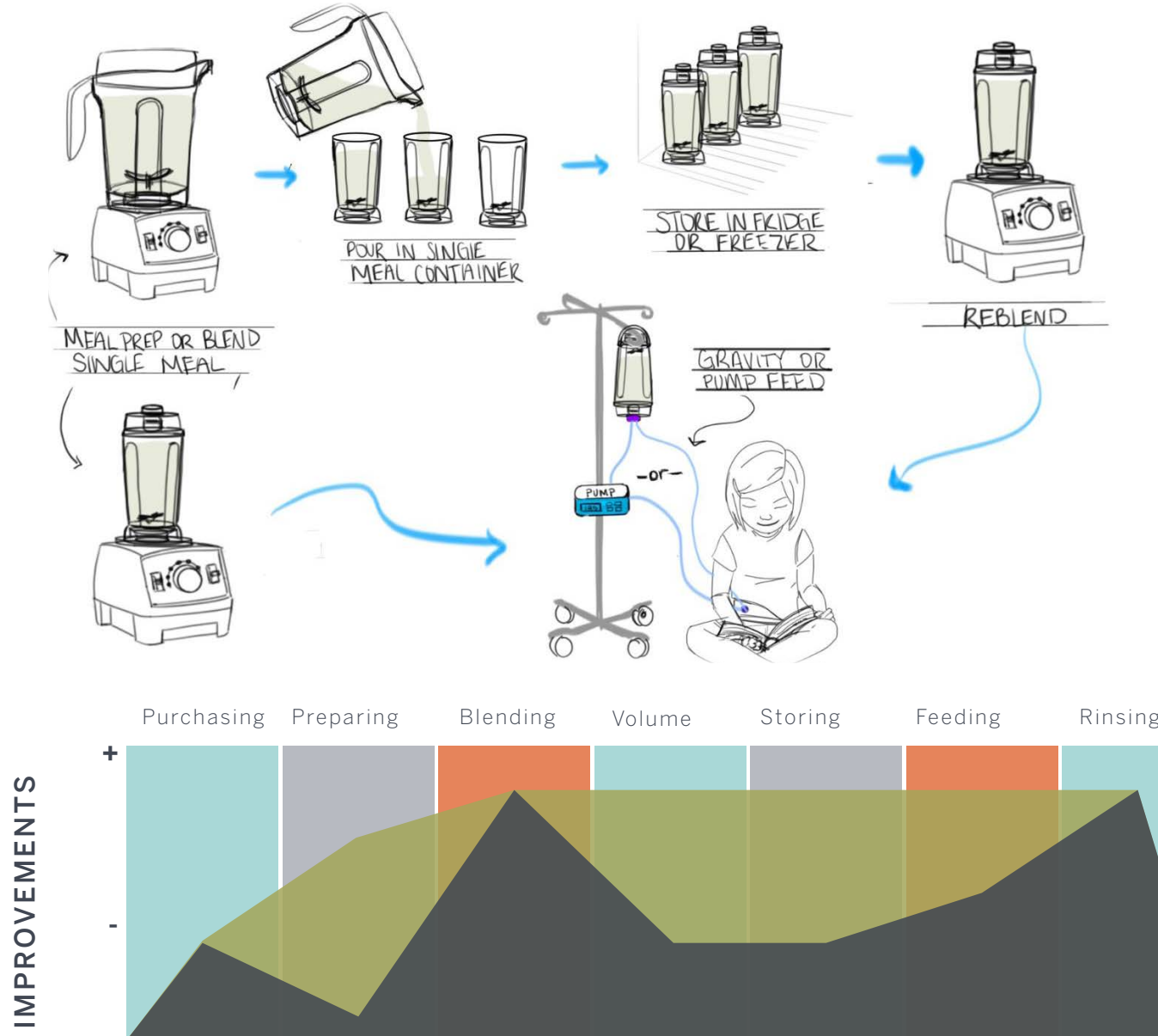
Subscription Service



STORYLINE

16

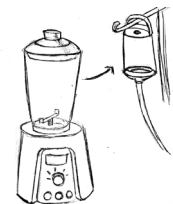
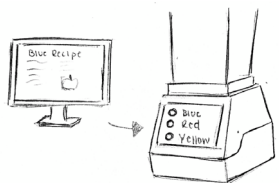
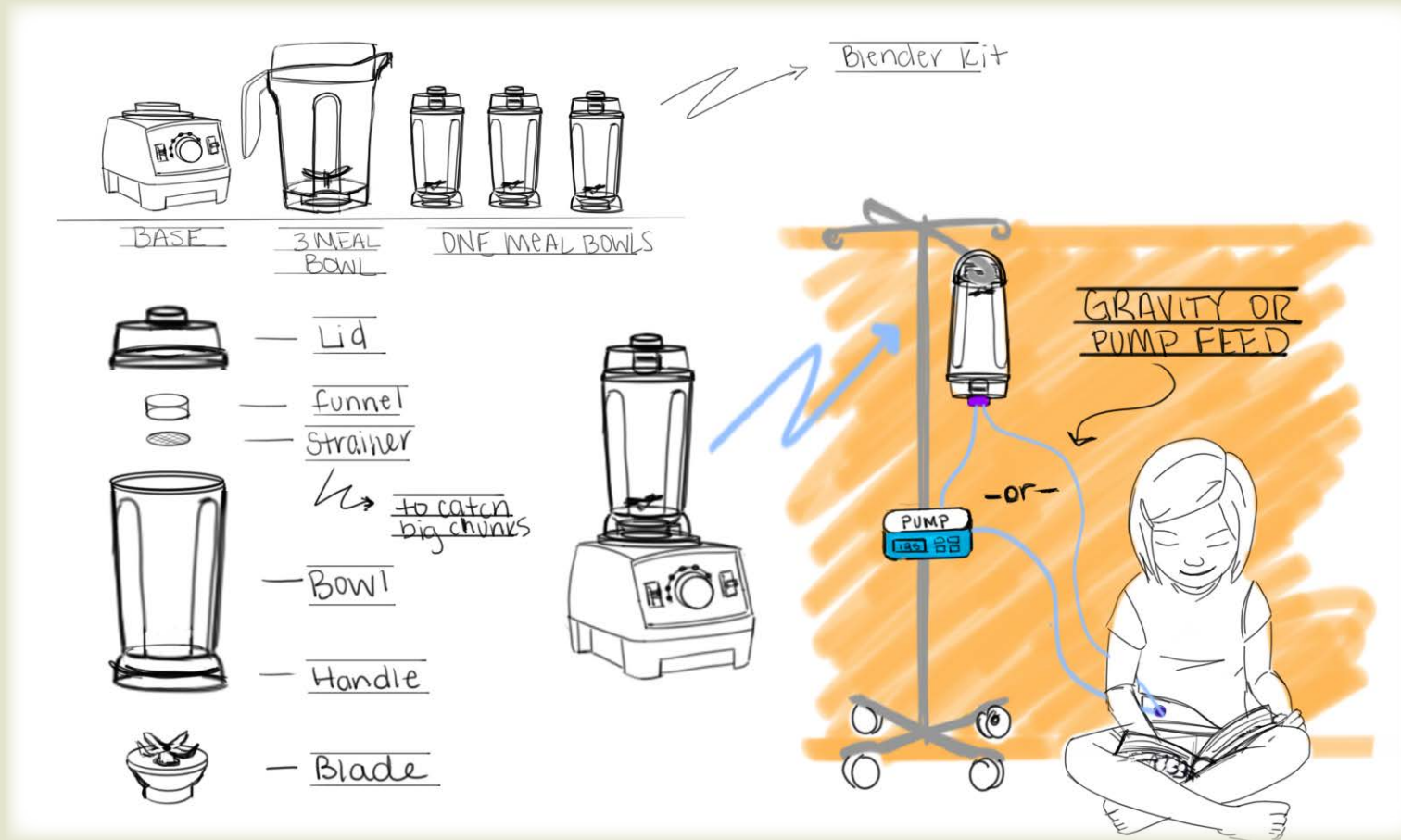
Through the knowledge obtained from research, a storyline of the blender kit was created which allowed for better visualization and knowledge of how helpful the product would be.



FINAL DESIGN PATH

15

After further ideation, the final blender kit system was chosen.



EVALUATIVE RESEARCH

Created facebook post and a survey to obtain feedback about our concept. The results were very high and the blender concept is highly desired by tube users.

STATS

POSTED IN **5 GROUPS**

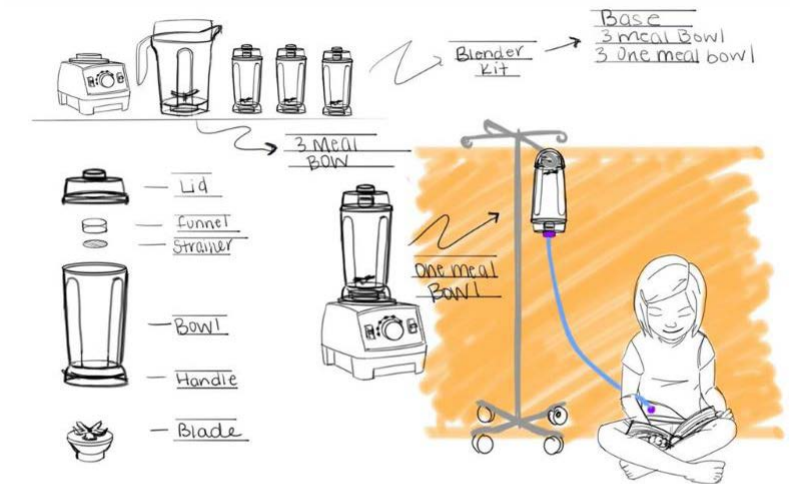
48 POSITIVE REACTIONS

9 NEGATIVE REACTIONS

5 IMPROVEMENT COMMENTS

clogging in the tube.

We would love to hear your feedback! Feel free to message below or direct message me! Thank you in advance!



25

18 Comments

Like

Comment



Azalea's Triumphs Let me just applaud you for listening to parents and caregivers 🙌 The built in strainer is genius. Could something like this be dishwasher safe?

Like · Reply · 7w

2



Kelsey Lu Shannon This is great, and I agree with Amber! My

DESIGN LANGUAGE

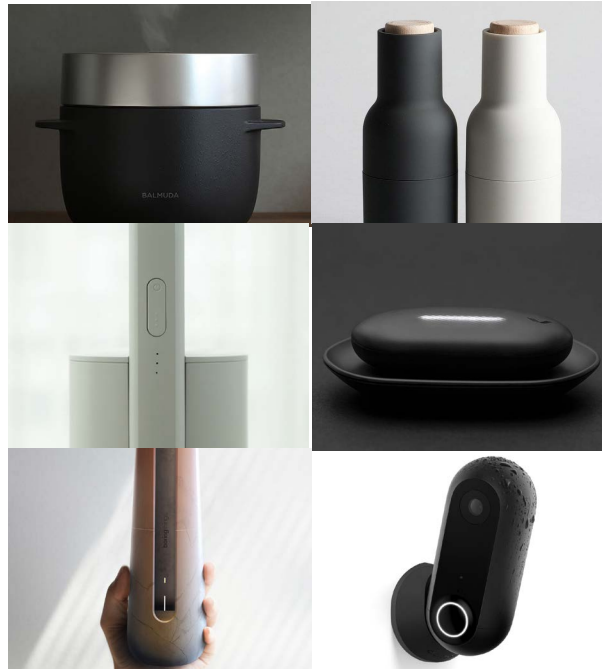
INTUITIVE

The blender needs to have a intuitive interface and system for ease of use.



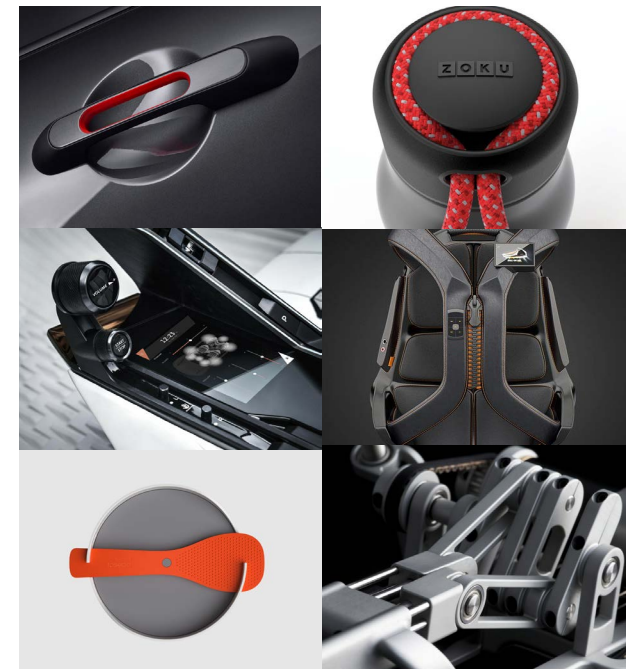
CLEAN

The overall design of the blender should look clean to feel approachable. The design should be inviting to make users feel blenderized diets can be done.



INNOVATIVE

The blender should be innovative to help separate itself from the current blender market.



BACKGROUND

RESEARCH

EXPLORATION

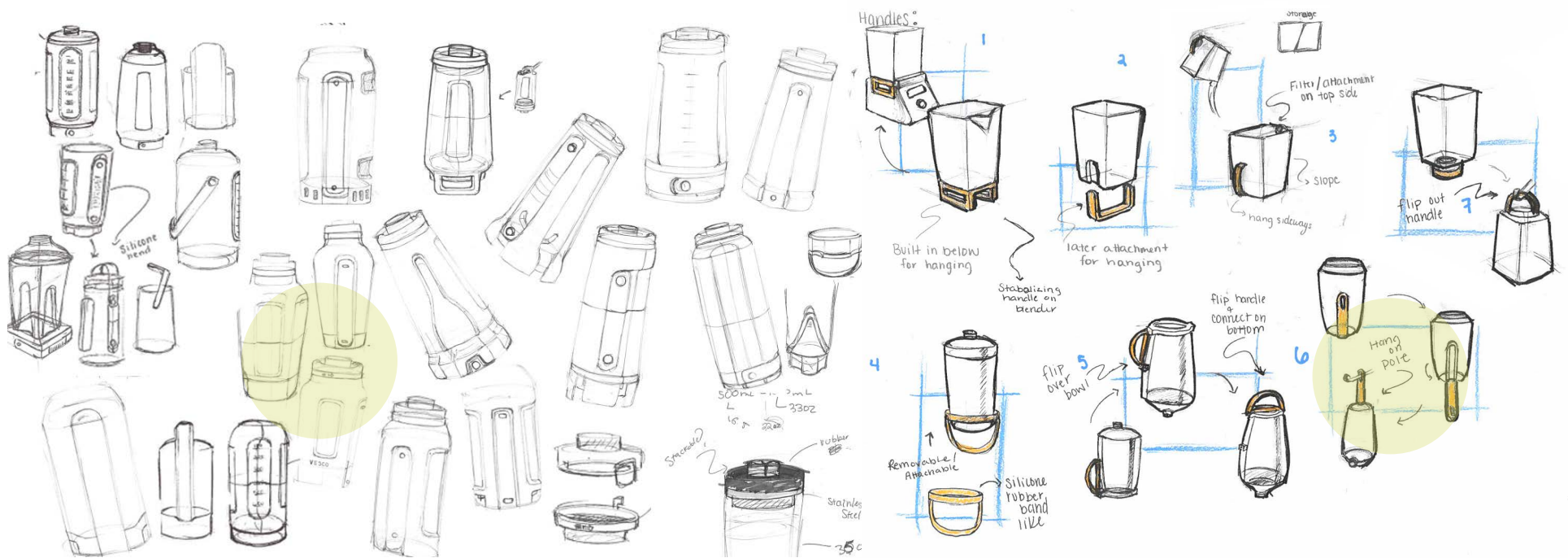
DEVELOPMENT

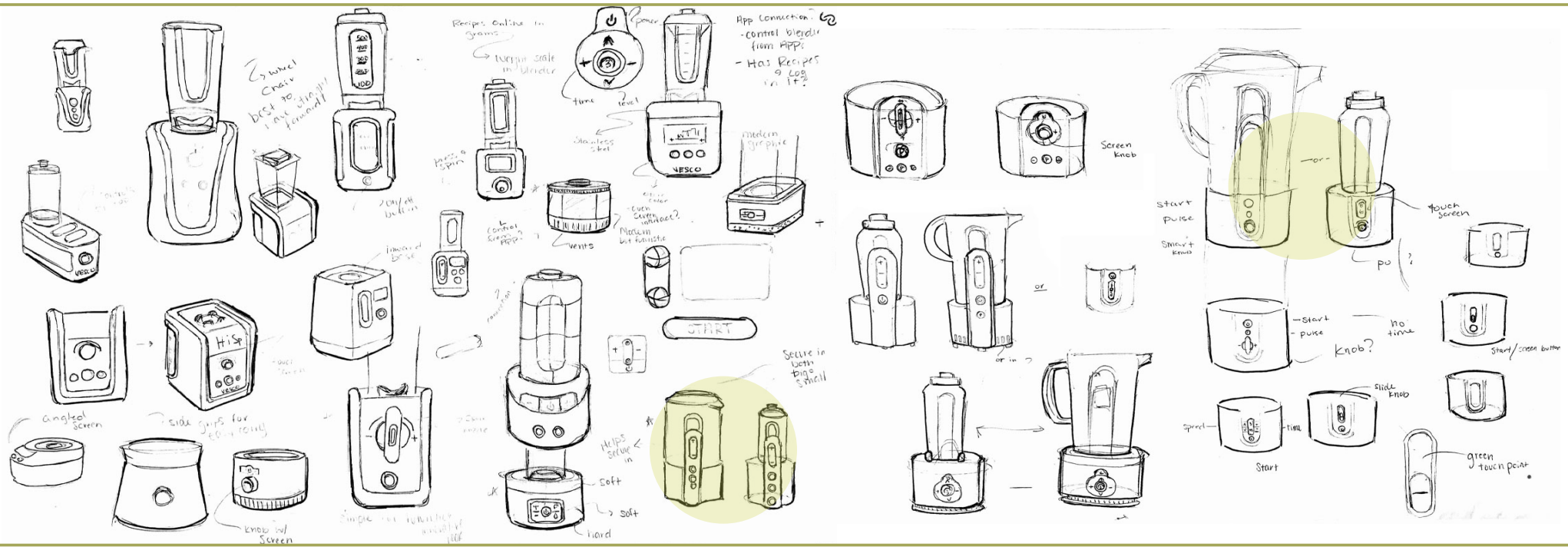
SOLUTION

BUSINESS MODEL

FURTHER IDEATION

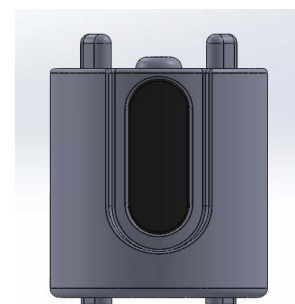
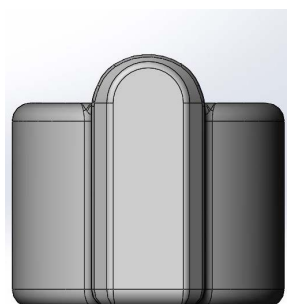
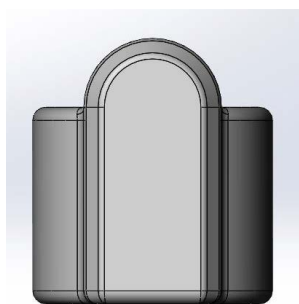
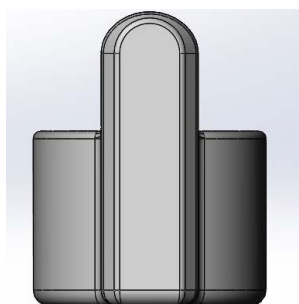
Sketch Ideation of different containers, hang methods, base design, and large containers.





CAD DEVELOPMENT

Tested different design variations in Solidworks/Keyshot Renderings.



PROTOTYPES

Made models using 3D printer to test function and fit.

Strap Function

Lid Connection

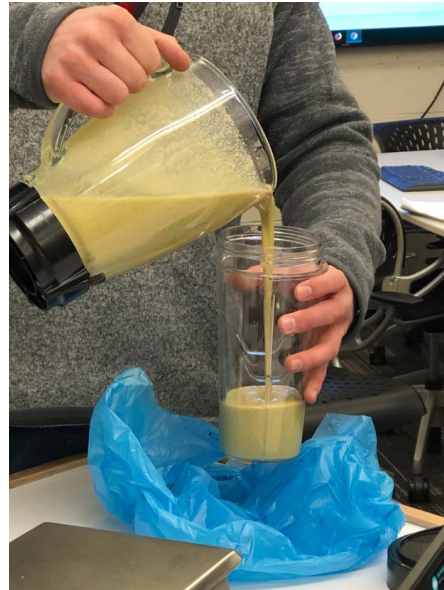
Strainer Connection

Fit to Blender



TESTING

Tested blenderized meals through various sized filters to test concept. Realized the design needed a air hole to help with food flow.



BACKGROUND

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ONE MEAL CONTAINER

SAFE

The product is made out of dishwasher safe plastic and the base is equipped with a measuring device for precise measurements

REPEATABLE

The reusable meal container creates a convenient process by being able to reuse the product and not have to worry about constantly ordering more one time use products.

EFFICIENT

The Vesco Puree Series creates a less time consuming process by minimizing the steps users have to take to create blenderized diets.



SIMPLIFIED PROCESS

Meal Prep and Re-Blend -or- create one meal at a time.

Blend and hang with the transformable strap.



Attaches to the Vesco Medical
40 mm screw cap.

ONE MEAL CONTAINER

Key features.



A removable filter to help prevent tube clogging while feeding. Detaches from the cap for easy cleaning.



The container has a hole in the side for air flow when feeding. The hole is plugged by the strap when blending.





Simple, Clean,
Convenient Process.

VESCO PURÉE SERIES

A modified blender kit designed to prepare homemade formula used by enteral tube users.



VESCO PUREE SERIES

A complete blender kit.



High powered weight
measuring base.



1000 ml container



2000 ml container

Creating enteral feeding meals
from the comfort of your home.



Normalizes meal time to help
improve the life of “tubies.”

